

Title (en)  
EMULATING SPATIAL PERCEPTION USING VIRTUAL ECHOLOCATION

Title (de)  
EMULATION RÄUMLICHER WAHRNEHMUNG UNTER VERWENDUNG EINER VIRTUELLEN ECHOLOKATION

Title (fr)  
ÉMULATION DE PERCEPTION SPATIALE AU MOYEN D'UNE ÉCHOLOCALISATION VIRTUELLE

Publication  
**EP 3612143 A1 20200226 (EN)**

Application  
**EP 18722787 A 20180406**

Priority  
• US 201715491897 A 20170419  
• US 2018026366 W 20180406

Abstract (en)  
[origin: US2018310116A1] Examples are disclosed that relate to a head-mounted device configured to perform virtual echolocation. The head-mounted device is configured to cast an array of rays at specified angles from a position derived from a pose of the head-mounted device in a physical environment, identify a plurality of intersection points of the rays with a virtual model of the physical environment, for each identified intersection point, modify an audio signal based on a head-related transfer function corresponding to the intersection point to produce a plurality of spatialized audio signals, for each spatialized audio signal, determine a time-of-flight adjustment based upon a distance between the corresponding intersection point and the position from which the rays were cast, and output each spatialized audio signal to one or more speakers with a delay based on the time-of-flight adjustment.

IPC 8 full level  
**A61F 9/08** (2006.01); **G01S 15/93** (2020.01); **G09B 21/00** (2006.01); **H04S 7/00** (2006.01)

CPC (source: EP US)  
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Citation (search report)  
See references of WO 2018194857A1

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**US 10321258 B2 20190611**; **US 2018310116 A1 20181025**; CN 110536665 A 20191203; CN 110536665 B 20220304; EP 3612143 A1 20200226; EP 3612143 B1 20210825; US 10701509 B2 20200630; US 2019274001 A1 20190905; WO 2018194857 A1 20181025

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